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MEDICAL CARE FOR ECHELONS ABOVE DIVISIONS - IS MEDICAL FORCE 2000 ADEQUATE TO NEED? -

BY

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United States Army

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USAWC MILITARY STUDIES PROGRAM PAPER

MEDICAL CARE FOR ECHELONS ABOVE DIVISIONS

IS MEDICAL FORCE 2000 ADEQUATE TO NEED?

AN INDIVIDUAL STUDY PROJECT

by

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United States Army

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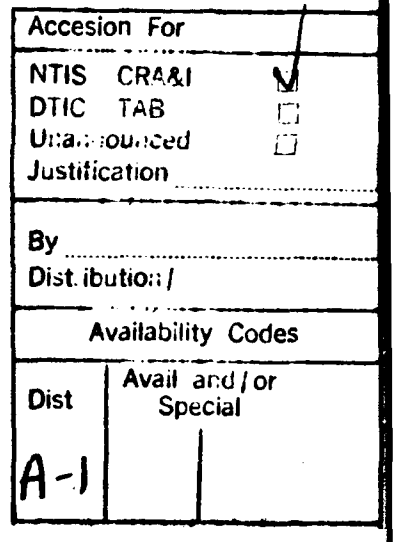

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ABSTRACT

AUTHOR: John M. Bull, COL, USA

TITLE: Medical Care at Echelons Above Division - Is Medical Force 2000 Adequate to Need?

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Medical care for the United States Army has been evolutionary. There have been few major changes in doctrine and organizations since the Second World War; but now the United States Army Medical Department has undertaken a major revision of Health Service Support in support of Airland Battle. This modernization process is ongoing at Division and below levels and is being implemented at Echelons above Division. This doctrinal and organizational effort of Medical Force 2000 is a major multiyear initiative of The Army Surgeon General in support of Army modernization programs. Medical Force 2000 is analyzed from the conception, implementation, and adaptability to meet the new requirements for the Army. Observations from Operation Desert Shield/Desert Storm are incorporated along with the new umbrella concept of Airland Operations to analyze the viability of Medical Force 2000 to support future Army requirements. Observations indicate that Medical Force 2000 concepts are viable, but selected elements of Health Service Support system require modification to efficiently support Airland Operations.

INTRODUCTION

Health Service Support (HSS) to the United States Army has been designed to "Conserve the Fighting Strength". HSS has been evolutionary in effort; however, much of the structure and concept still remains from the Second World War, Korean War, and Vietnam experiences. The 1983 Army Medical Department (AMEDD) Mission Area Analysis noted that the current HSS system had significant shortfalls which precluded it from meeting all minimum essential requirements for health service support to the soldier on the integrated battlefield. The challenge to the Army Medical Department (AMEDD) was to develop alternatives to perform the mission more effectively. The AMEDD was required to improve units to accomplish the mission and to design a viable force that would accomplish requirements in a zero sum game environment. The AMEDD was tasked to take all corrective actions without an increase in personnel.[1]

In 1984, the AMEDD's Medical Systems Program (MSPR) identified deficiencies in HSS and proposed a wartime medical support system to correct these deficiencies. It should be noted that the organizational and doctrinal design of MF2K had been formulated on the Soviet threat primarily in support of NATO services. This concept of HSS to Airland Battle (HSSALB), approved by the senior Army leadership and the AMEDD, refined concepts, designed organizational realignments, and developed plans to implement the concept. On 11 April 1986, the U.S. Army Operational Concept Health

Service Support Airland Battle, TRADOC Pamphlet 525-50 was approved and published. Evolving concepts were incorporated and an initiative known as Evolving Medical Force 96 (EMF 96) was established. Health Service Support to Airland Battle was renamed Medical Force 2000 (MF2K) and represented the maturation of the modernization process at Echelons Above Division (EAD).[2]

ASSUMPTIONS AND LIMITATIONS

This paper examines the doctrinal and organizational elements of MF2K; implementation strategies; and modifications to the current structure. Second, an overview of Operation Desert Shield/Desert Storm observations for Health Service Support is examined in terms of adequacy. Third, MF2K, is examined in the capability to support Airland Operations and what organizational and doctrinal changes are required. Finally, MF2K and modifications is examined to determine adequacy of need. The scope of the paper is limited to Medical Force 2000 and will not include a detailed examination of the performance of medical operations in Southwest Asia.

EVOLUTION

The HSS system is designed to support the Army's Airland Battle Doctrine of fighting the battle in rear, close, and deep operations. The HSS is built on functional areas as depicted in figure 1 and is

capable of supporting a broad spectrum of conflicts.[3]

THE HEALTH SERVICE SUPPORT SYSTEM

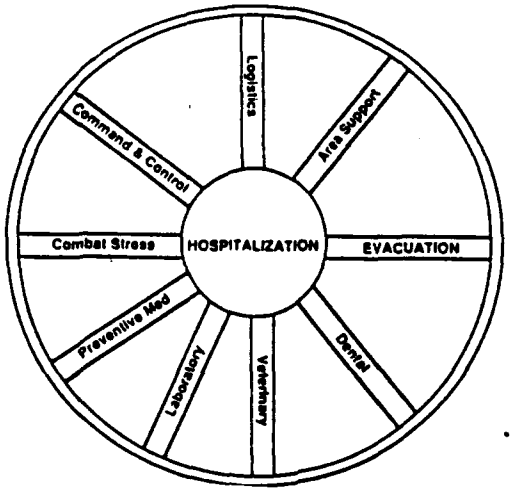

Figure 1

Support to the Army in a war effort is a continuum of care from the individual soldier in the field through the Continental United States (CONUS). Conservation of the fighting strength functions as a combat multiplier and serves as a ready source of trained replacements. The revised concept of HSS incorporates and reenforces the following tenants: wellness/fitness, prevention, immediate forward care, a new hospital system, dedicated evacuation system, and the CONUS support base.[4]

HSS provides five echelons of health care in providing medical services in this continuum. Each echelon of care feeds into the

health care system and impacts on MF2K organizations that provide care at echelons above divisions. Echelons I and II HSS provide a modular organizational structure at divisions and below. The modular medical (MODMED) support system is built around six modules (combat medic, treatment squad, ambulance squad, area support squad, patient holding squad, and surgical squad) orientated to forward casualty assessment, collection, and evacuation, treatment, and lifesaving surgical procedures.[5] Echelons III and IV HSS are provided by MF2K organizations, some of which were designed with the capability to reconstitute or reenforce the modular medical units in echelon II. Echelon V HSS is the CONUS based element of health care which is the highest level of care which includes long term care and rehabilitation.

The primary flow of patients generally starts at echelon I and II and progresses through to the echelons capable of providing the appropriate level of care. Echelons I and II are those modular elements that are designed to acquire, receive, sort, and to provide emergency care to divisional personnel. Patients can, however, enter the health care system at any echelon of care and be evacuated and treated at the appropriate level.

MF2K provides organization and doctrine for echelons III and IV HSS in echelons above divisions. These organizational elements are modular in effort; and, are designed to support conflicts across the spectrum.[6] MF2K complements the ongoing modernization (MODMED) programs at division and below by providing reconstitution of echelon

II units from echelon III area support medical battalions. MF2K also complements the fielding of the Department of Defense hospital modernization effort, Deployable Medical Systems (DEPMEDS), in echelon III and IV. Although not tied directly to the CONUS base, echelon V, MF2K provides a modern, modularized HSS system that feeds into the CONUS base. The CONUS base is being upgraded by the U.S. Army Health Services Command to integrate the CONUS medical mobilization structures with military and civilian health care facilities.[7] The continuity of care and the integrated systems provide a medical support system to the soldier and it supports the warfighting Commander in Chief's (CINC) mission. MF2K provides a sizeable portion of that HSS in echelon II and III.

The force design and structure of MF2K is designed to support Airland Battle and to be evolutionary in support of Airland Battle Future acquisitions. MF2K defines force structure, acquisitions, new systems, training programs for units, and an overall training program for new leaders.

The major functional areas with the identified weaknesses in the current force and the proposed fixes in MF2K are shown in figure 2.[8] The hospitalization component provides the appropriate mix of beds and staff to support the soldier on both current and future battlefields. Evacuation assets are aligned with adequate command and control units to provide timely evacuation to an appropriate level of medical care. The logistics organizations are restructured to meet the increased operations of Airland Battle. Combat Stress

Companies and detachments now operate far forward with supported units and provide timely and adequate interventions to prevent or reduce stress casualties. Preventive medicine units are consolidated into two organizations, thus reducing the number of narrow focused units; and providing greater flexibility and more services. Area Support Medical Battalions have been restructured eliminating multiple dissimilar units. These battalions provide rear area medical support plus the capability to reconstitute line medical companies in the division area.

CAPABILITY COMPARISON

FUNCTIONAL AREA	CURRENT FORCE	MEDICAL FORCE 2000
HOSPITALIZATION	LIMITED OR/ICU CAPABILITY	OR/ICU INTENSIVE THROUGH IMPROVED STAFFING MIX
EVACUATION	AIR AND GROUND RESOURCES ARE NOT OPTIMIZED.	AIR AND GROUND RESOURCES ARE UNDER A SINGLE MANAGER
LOGISTICS	LACKING CENTRAL MANAGER AT THEATER ARMY; BLOOD MANAGED SEPARATELY FROM CLASS VIII.	BLOOD MANAGED WITHIN CLASS VIII SYSTEM. CENTRAL MANAGER FOR CLASS VIII ESTABLISHED AT THEATER ARMY.
AREA SUPPORT	MANY SMALL INDEPENDENT DETACHMENTS. LACKING RECONSTITUTION CAPABILITY.	CONSOLIDATES AND REFINES C2 OF LEVEL II HSS. CAPABLE OF RECONSTITUTING LEVEL I ASSETS.
COMMAND AND CONTROL	SPAN OF CONTROL IS LESS THAN OPTIMAL.	C2 STRUCTURE IS REFINED AND OPTIMIZED. OVERHEAD IS REDUCED.
COMBAT STRESS	ULTIMATELY IMPEDES RTD OF STRESS PATIENTS THROUGH UNNECESSARY EVACUATION.	IMPROVES RTD RATES BY TREATING MINOR CASES FAR FORWARD.
PREVENTIVE MEDICINE VETERINARY SERVICES DENTAL SERVICES TEAMS LABORATORY SERVICES	MANY SMALL, SPECIALIZED INFLEXIBLE, INDEPENDENT UNITS.	LIGHTER, MODULARIZED, EASILY TAILORED UNITS.

* OR/ICU = OPERATING ROOM/INTENSIVE CARE UNIT

Figure 2

When MF2K was approved for implementation in 1989, it was approved as a no growth initiative based on the approved 1994 force structure. Using that force structure and the end strength generated from each year Total Army Analysis, the number of units have been reduced accordingly from the approved 1994 force structure. As of December 1991, the mix between the active and reserve component units was not final. Depending on the current drawdown of the Army and pending further reductions, the number of units and the mix between the components will change. It is anticipated that the mix will change in the Total Army Analysis that is to be done yearly instead of biannually until the final decision on the size and composition of the Armed Forces is reached.[9,10]

Figures 3 through 13 summarize the capabilities of the MF2K organization and reflect the original concept base of 1989 (left side) and the latest proposals from the TAA 99 (right side) process.[11,12] They also provide a comparison of how MF2K organizations and force structure have been modified in downsizing the Army. Because of the zero sum personnel limitation, the number and type of units do not cross walk one for one from old to new.

LABORATORY SERVICE - The current theater area medical laboratory (TAML) function is performed by several area medical laboratory detachments assigned on a geographical basis. It uses the latest state-of-the-art equipment that focuses on the total evaluation of

the health of the theater of operations. Consolidation of resources at a central laboratory allows for a greater concentration of technology and state-of-the-art equipment than multiple area laboratories. The TAML supports the theater of operations with greater consultative, investigative, and specialized definitive services. The TAML also has the capability to deploy squads for on the spot identification of toxins and agents which may endanger the life of the soldier on the battlefield.[13]

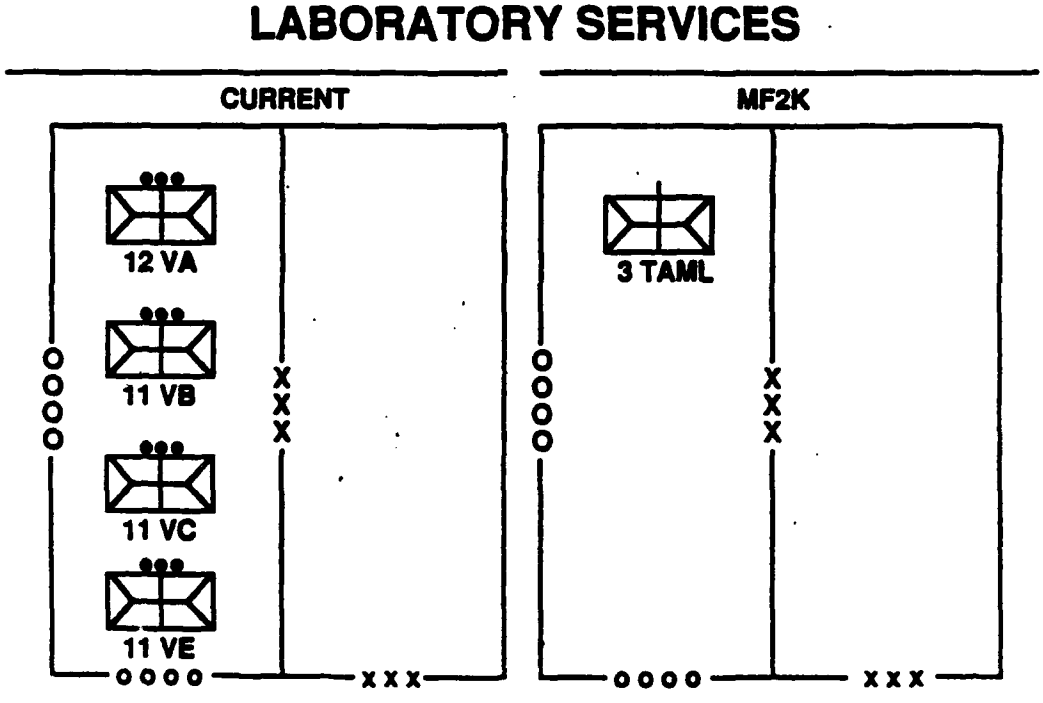

Figure 3

PREVENTIVE MEDICINE - The prevention of illness and disease is the most effective, least expensive means of providing the combat commander with the maximum number of healthy, vigorous soldiers. Preventive medicine organizations at Corps and EAC are structured into two mobile preventive medicine detachments (Sanitation and Entomology). These two detachments replace the five detachments of the current force and provide a multifunctional service. In addition, entomological and sanitation equipment is being downsized and streamlined to provide greater capabilities and flexibility.

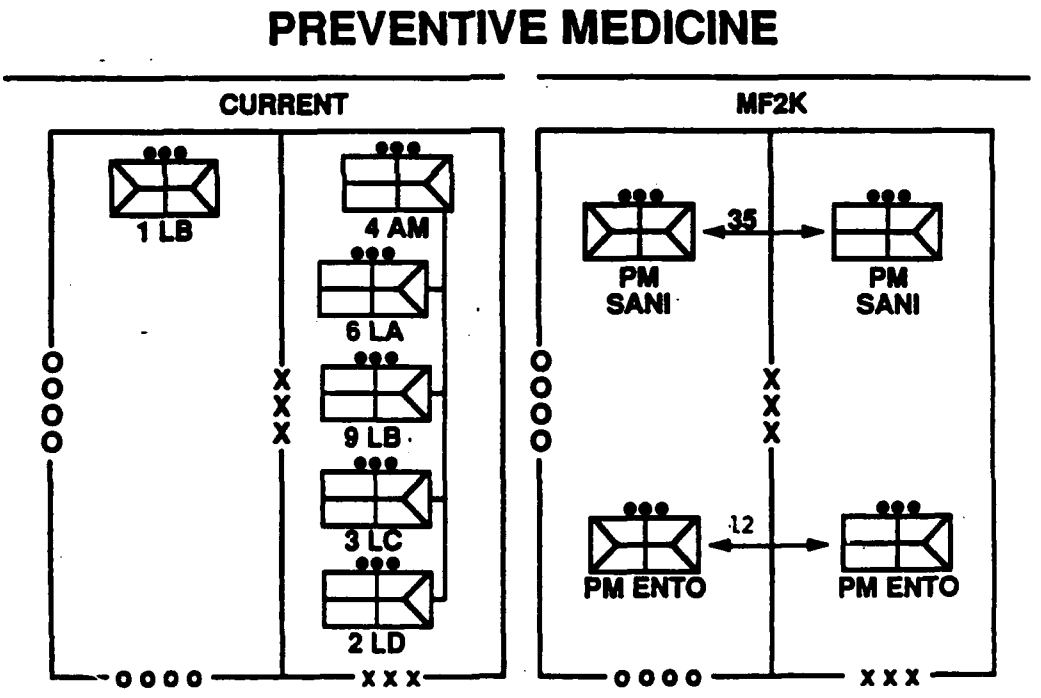

Figure 4

EVACUATION AND MEDICAL REGULATING - This function provides for the timely, efficient movement and enroute care of wounded, injured, or ill persons from the battlefield and other locations to medical treatment facilities. Dedicated evacuation resources are provided by division, corps, and EAD units. An evacuation battalion is established as a command and control element to coordinate both ground and air evacuation units in the theater of operations to provide the most efficient use of assigned evacuation means. The air ambulance resources are reconfigured into 15 ship companies and six ship detachments to provide aeromedical evacuation, emergency movement of medical personnel, equipment, supplies, and blood products in a theater of operations. The air ambulance company is allocated on the basis of one per division plus one per two divisions for corps level support. The ground ambulance company assigned to the evacuation battalion is tactically located where it can best control its assets and execute its patient evacuation mission. It is allocated on the basis of one per division or equivalent plus one per theater army and corps supported. In the ground ambulance company, there are now 20 HMMWV and 20 CUCV ambulances, an increase of four ambulances per company; however, there are no bus ambulance detachments in the MF2K structure. The integration of air and ground assets will result in better utilization of assets, increased flexibility, and better evacuation support to the soldier.[15]

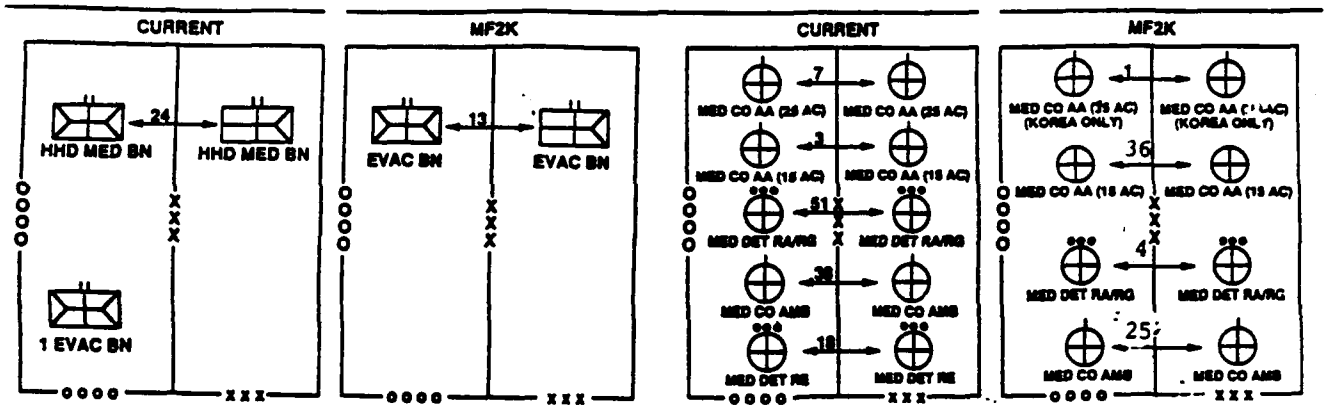

Figure 5

HOSPITALIZATION - Since 1982, the MF2K hospitalization system has undergone an evolutionary process resulting in many significant revisions. MF2K replaces the current seven hospital system of Mobile Army Surgical Hospital (MASH), Combat Support Hospital (CSH), Evacuation Hospital, Field Hospital (FH), General Hospital (GH), Station 200, and Station 500 with four Corps and EAD hospitals. It also replaces fifteen specialty teams with six specialty teams (Infectious Disease, Neurosurgery, Eye Surgery, Head and Neck Surgery, Renal Hemodialysis, and Pathology). The two Corps hospitals are the 30 bed MASH and the 300 bed CSH. The two EAD hospitals include the 500 bed FH and the 500 bed GH.

MASHs, employed near the division rear, are designed to provide the life saving surgery and care for non-transportable casualties.

They are equipped with lightweight equipment to enhance mobility. Organic to the MASH is a Forward Surgical Team (FST) which can deploy and operate independently of the hospital for a limited time. The FST offers the capability to move forward with the battle and provide immediate, life saving surgery.

CSHs have the primary mission to provide resuscitative surgery and trauma treatment prior to evacuation. They also have a return to duty (RTD) capability commensurate with a seven day evacuation policy. GHs and FHs are located at EAC. GHs serve to stabilize and prepare patients for evacuation to CONUS; whereas, the FH's primary mission is to provide care for those patients who will return to duty within the theater evacuation policy.

The CSHs, FHs, and GHs are designed using a four module concept. The four modules include: hospital unit, base; hospital unit, surgical; hospital unit, medical; and hospital unit, hold. The internal hospital design uses DEPMEDS standardized equipment and shelters, which are built as functional patient care modules and are organized consistent with each hospital's organizational need and mission requirement. Organizational design of the MF2K hospitals provides an appropriate bed mix and operating room hours to support the types of patients expected in Airland Battle.[16]

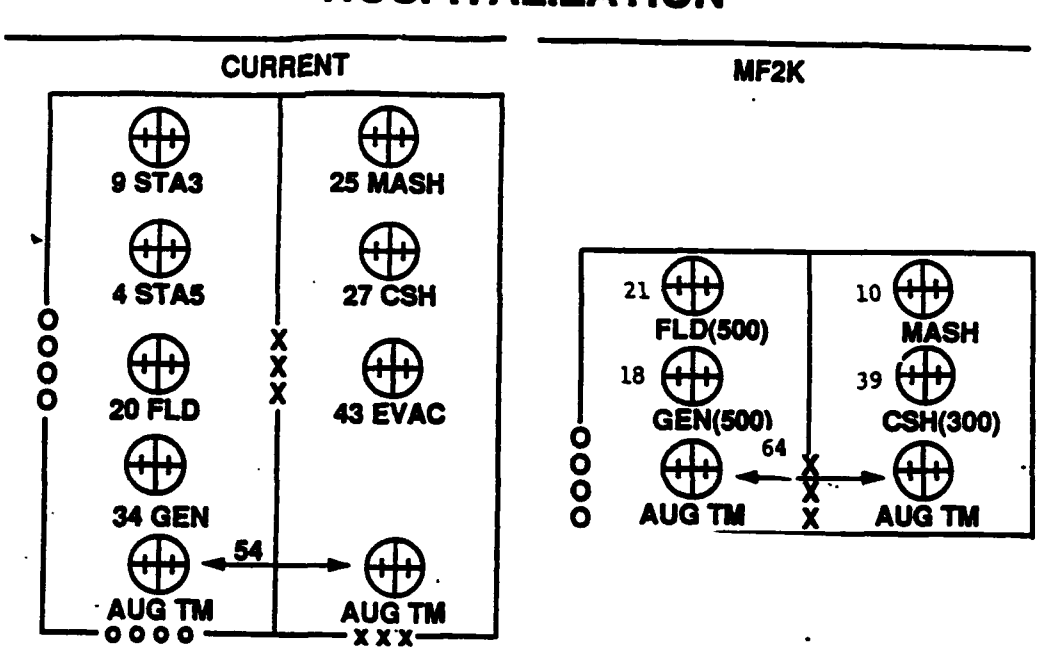

Figure 6

VETERINARY SERVICES - Veterinary personnel are charged with responsibility for sanitary inspections of potential food sources and have the responsibility for the inspection of food to ensure quality, safety, and wholesomeness for all three military services. They also inspect subsistence and food producing animals exposed to nuclear, biological, or chemical agents. They provide programs to control animal diseases that are communicable to humans and complete veterinary care for all government-owned animals. Veterinary organizations are structured into general veterinary units to provide routine care at multiple locations. These units can provide food

inspections and emergency animal care to support independent task forces and low intensity conflicts. The veterinary medicine detachment provides definitive animal medical care at independent, full service locations within the theater. Small and large animal hospitals are consolidated, thereby reducing overhead structure.[17]

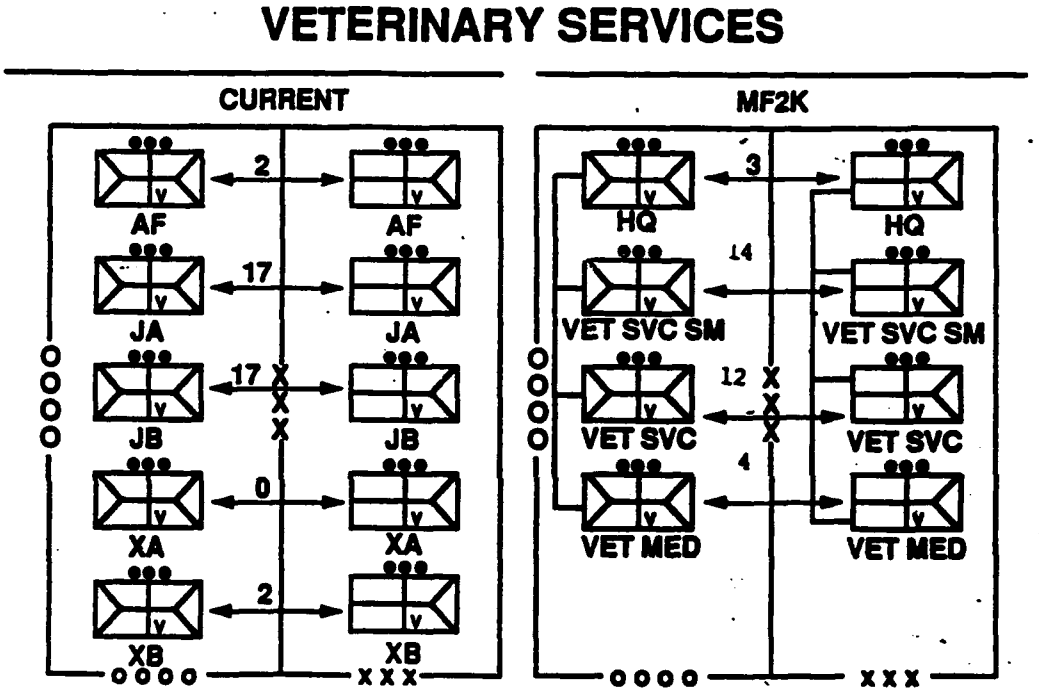

Figure 7

DENTAL SERVICES - The mission of dental support in a theater of operations is conserving oral health of the command by preventing oral diseases; promoting dental health; and providing treatment to eliminate or reduce the effects of dental diseases and injury. Dental services, for the most part, have changed the names of its

organizations so they follow the traditional Army system of designating units. The command and control detachments become Headquarters and Headquarters Detachment (HHD) Dental Battalions (BN) and the functional detachments become companies and detachments. MF2K Dental Bns serve as command and control units for companies and detachments.[18] Table of Organization and Equipments (TOE) dental labs are eliminated and the functions of the fixed and removable prosthetics units are combined to form a prosthetics detachment. Area support dental units provide dental care to troops within a geographical area of responsibility.

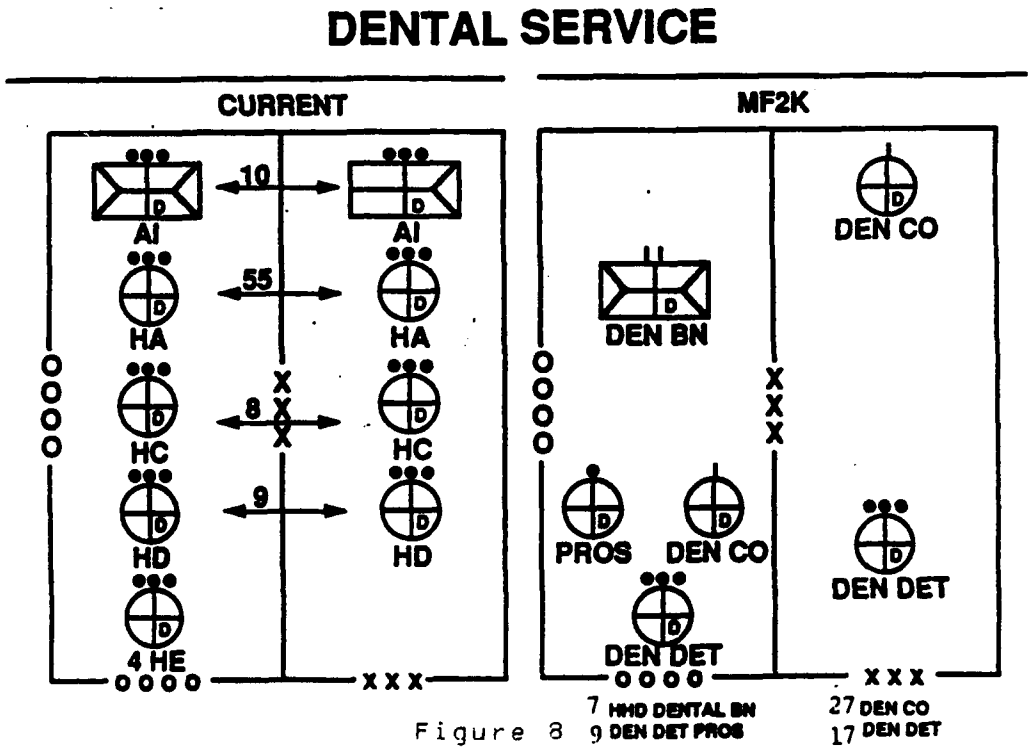

Figure 8

LOGISTICAL SUPPORT/BLOOD SERVICES - Medical logistical support includes Class VIII supplies, oxygen and resuscitative fluids production, optical fabrication, biomedical maintenance, and blood processing, storage, and distribution. Logistics support is reconfigured using forward and rear medical logistics battalions to support division and Corps and EAC medical units respectively. The Medical Battalion, Logistics (Forward & Rear), replaces the Medical Supply, Optical and Maintenance Battalions (MEDSOM), Medical Supply Teams, Medical Maintenance Equipment Teams, and Blood Processing, Collecting and Distribution Teams. Blood Bank platoons now assigned to the Medical Logistics Battalions perform blood services. A Medical Logistics Support Detachment is organized to augment MEDLOG Bns when troop strength or number of hospitals supported dictates augmentation. A Theater Medical Materiel Management Center (TMMMC) at EAC manages the theater Army blood program and provides centralized theater level management for Class VIII supplies, medical equipment maintenance. Logistical elements of the MF2K structure are designed based on a workload as determined by the DEPMEDS data base.[19]

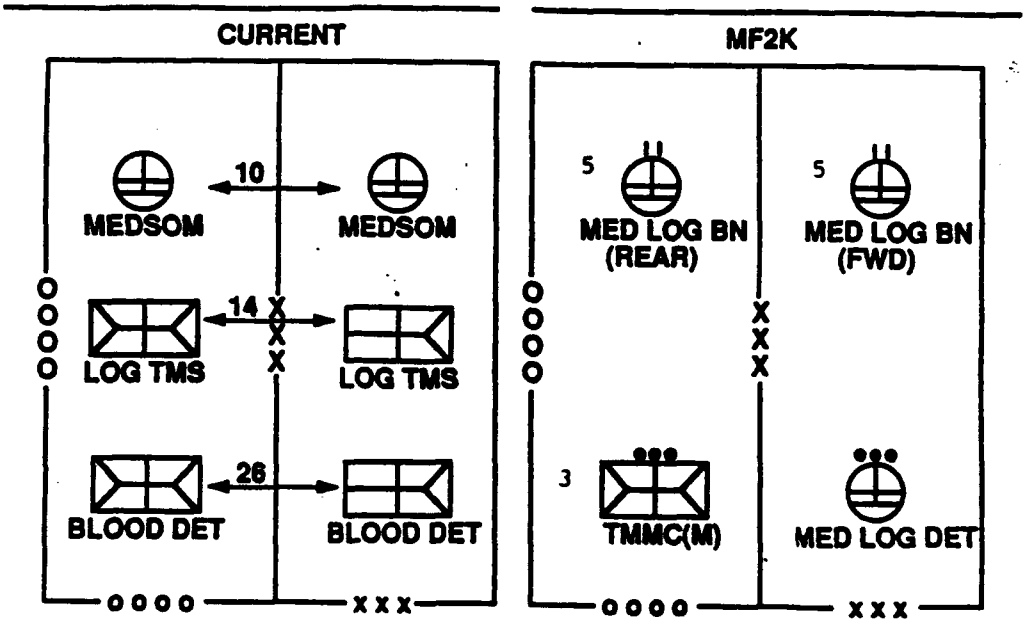

Figure 9

COMBAT STRESS CONTROL - Most soldiers who suffer battle fatigue can return to duty quickly, provided they are treated immediately, and as close to their units as possible. Replacing the current forces psychiatric team, Medical Combat Stress Control (CSC) modular teams are deployed in the brigade, division, and the Corps area to reenforce the unit's organic mental health sections.[20] These teams provide units with preventive consultation and triage and support reconstitution activities. The Medical Detachment CSC has preventive and restoration teams. In the Corps, the Medical Company, CSC, has preventive and restoration teams to support a two or three division

slice. These units work with the combat commanders to prevent stress, provide rehabilitative services and refer only those patients requiring hospitalization.

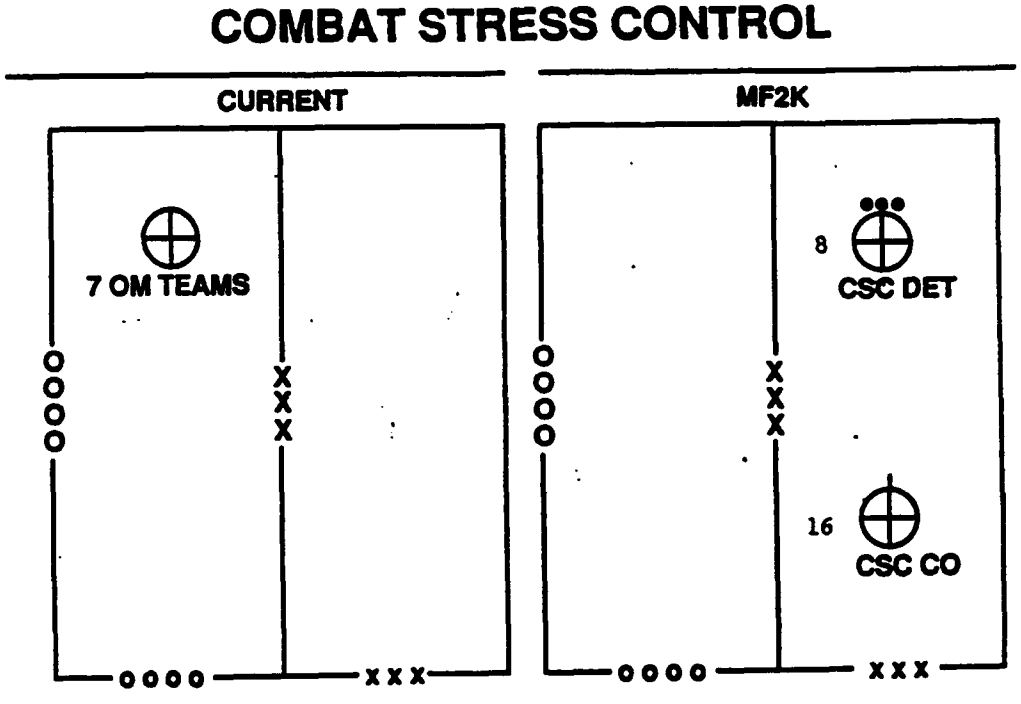

Figure 10

AREA MEDICAL SUPPORT - The primary mission of Area Support Medical Battalions and the Medical Company Holding is to provide routine and emergency medical treatment, on an area basis, to units that do not have organic medical elements. The Medical Company, Holding operates in the Corps or EAC to provide a holding capability. The battalion operates within the Corps and EAC. The Area Support Medical

Battalion reorganizes and consolidates the missions performed by the current force dispensaries, separate medical companies, and numerous teams. The results of this reorganization and modular design are: a capability to medically support the rear battle, and immediate reenforcement or replacement of division medical assets.[21]

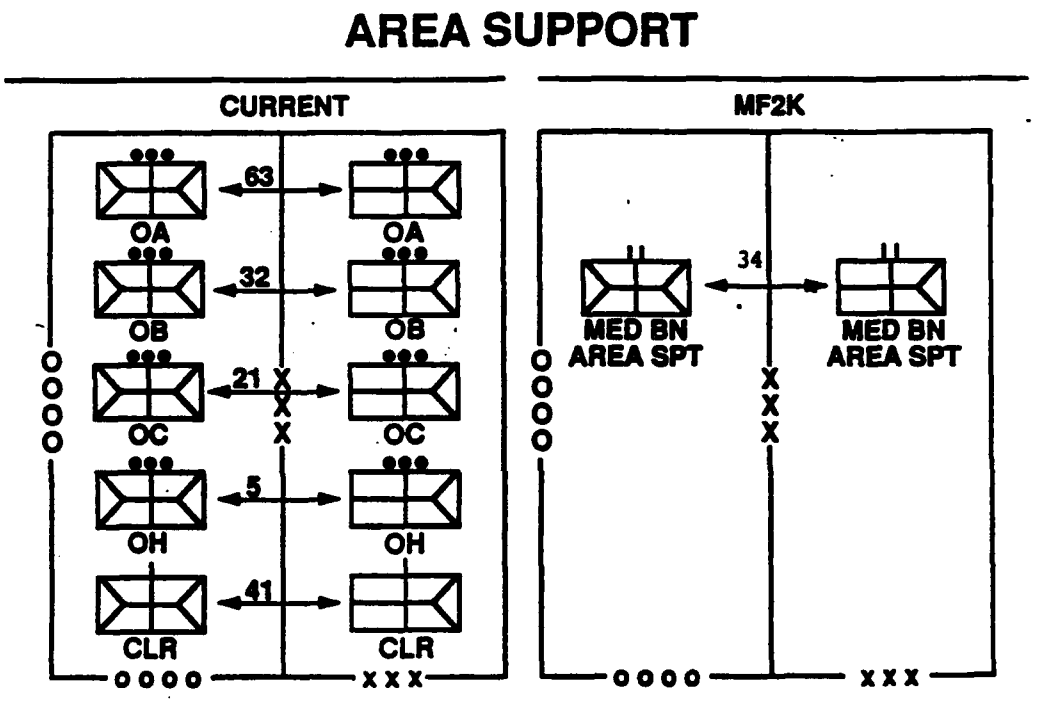

Figure 11

COMMUNICATIONS, COMMAND AND CONTROL - Modern equipment and technology, combined with the extreme fluidity of the modern battlefield, dictate the need for highly effective command and control organizations. The current force structure include the following: medical command, medical brigade, medical group, hospital center and detachment (AC). MF2K streamlines command and control by eliminating the medical group, hospital center, and the detachment (AC) from the communications zone.[3]

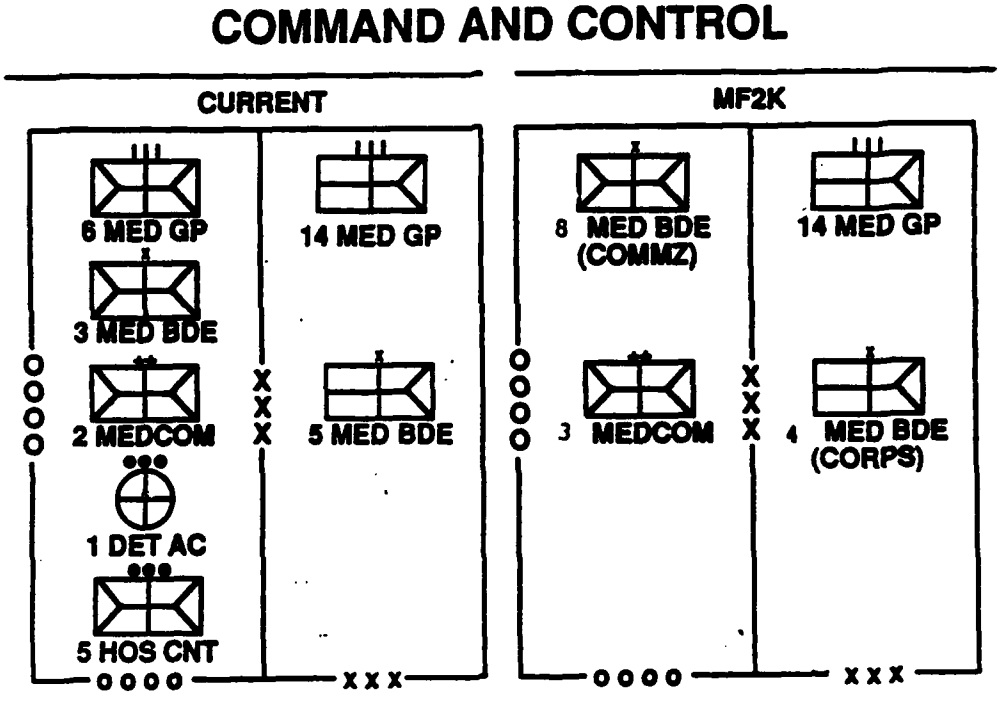

Figure 12

Much of the current medical structure is a result of the modification of the organizations made during previous conflicts. One major modification was the Medical Unit Self Contained Transportable (MUST), introduced during the Vietnam conflict. While it was adequate to that environment and conflict, the demands of Airland Battle rendered the facility obsolete. The modernization of the echelons above division medical force is a two part process consisting of the fielding of the Deployable Medical Systems (DEPMEDS) equipment to hospitals and the programming and execution of Medical Force 2000.

The DEPMEDS project is part of a Department of Defense initiative to standardize medical care across the services and to reduce cost and avoid duplication. The DEPMEDS modernization effort was initiated in 1984 with the Army fielding its first hospital in 1987. The Army portion of the DEPMEDS purchase was terminated in 1992 with the purchase of 81 units.[23] This is a substantial reduction from the original purchase estimate of 162 units.

Closely aligned with the DEPMEDS fielding schedule was the MF2K initiative. Because the DEPMEDS system is modular in concept and MF2K hospitals are DEPMEDS equipped, the two programs are compatible and interdependent. The conversion process is programmed to be completed by 1998; however, there will continue to be a mix of MF2K hospital and non-MF2K in the near term force structure. This process, evolutionary in nature, is being constantly revised by the leadership at OTSG, Army Reserve, Army National Guard Bureau, and

major commands. The entire process will certainly be modified by the drawdown of the Army.

Beginning in the 4th quarter of fiscal year 91, hospitals were equipped with the MF2K structure. The DEPMEDS Project Manager, in conjunction with MACOMs, established a conversion schedule to reconfigure hospitals equipped with non-MF2K structure into MF2K hospitals. This process and conversion strategy was altered during Operation Desert Shield/Desert Storm when all hospitals sent to the theater were modernized with DEPMEDS equipment. Those hospitals are to be reconstituted in MF2K structure upon redeployment and rebuild in the depot system.[24]

Although not an element of MF2K, the modernization effort of the Theater Army Medical Management Information System (TAMMIS) is another component of medical modernization. TAMMIS provides for the automated management of medical units during peace and wartime. TAMMIS has the capability to automate patient regulating and accounting, medical logistics, biomedical maintenance systems, pharmacy, and blood management.[25] TAMMIS began fielding to units in FY90; but during the Gulf conflict, TAMMIS fielding was accelerated. Although the system provided enhanced capabilities, some serious deficiencies in communications capability and the capability to interface with Joint Medical Regulating Systems were identified.

RESOURCING

The concept of MF2K was approved by the Vice Chief of Staff of the Army in August 1989 and subsequently was programmed in the FY 92-97 Program Objective Memorandum (POM). The original intent was to resource the MF2K program through a centrally funded Management Decision Package (MDEP); but, subsequent guidance in November 1989 from Headquarters (HQ), Department of the Army (DA), Deputy Chief of Staff, Operations (DCSOPS) directed MACOMs to program adequate resources to convert units. Although this guidance impacted on the MACOM's long term planning, it allowed commanders to realign their priorities based on available and realistic funding levels.

HQ, DA, continues to provides centralized funding for specified areas such as procurement of new equipment, transportation between commands, storage costs, conversion teams, training materials, funding conferences, and the management of the conversion effect. Furthermore, fiscal guidance for the modernization effort is upgraded in POM 94-99 guidance and long range planning guidance from the Office of the Surgeon General.[35]

LOGISTICS

In conjunction with fiscal guidance, the task to oversee the logistical impact of the project was assumed by the United States Army Medical Material Agency (USAMMA), a Field Operating Agency of

the Office of the Surgeon General. USAMMA is responsible for implementing the logistical aspect of the force modernization effort to include: fielding and equipment transfer teams; analysis of equipment densities; procurement of new equipment; and all aspects that align with a total package fielding program. USAMMA is coordinating action in the Department of the Army MACOM's and the National Guard Bureau to provide for a smooth transition process. USAMMA's experience with fielding the DEPMEDS program can provide the AMEDD valuable lessons learned in minimizing the readiness impact on converting units.[27]

TRAINING

Production of training and leadership development materials was accelerated by the AMEDD School and Center. Modifications to current training and doctrinal documents have been accelerated and aligned with the conversion schedules and are incorporated in the AMEDD's training base.

In addition to new publications and doctrine materials, seven Reserve Training Sites - Medical (RTMS-MED) are either on line or programmed. To support forward deployed units, a Central Training Site (CTS) is operational in Germersheim, Germany. Each of these sites is equipped with appropriate DEPMEDS equipment and support equipment to provide initial and sustainment training. The RTMS-MED offers excellent training opportunities for Reserve Components and

plans are in development at Forces Command and the National Guard Bureau to expand these sites to accomplish expanded training roles for other functional areas of health service support.

The AMEDD School and Center is expanding the DEPMEDS training site at Camp Bullis, Texas, to include hands-on training for initial entry medical personnel; and also to support the rise of simulations in Combat Service Support/Tactical Simulation Systems (CSS/TSS). This program interfaces with simulations in Joint Exercise Support Systems (JESS) providing realistic Combat Service Support play in warfighting simulations. Additionally, the AMEDD School and Center is fielding New Organization Training Teams (NOTT) to supplement New Equipment Training Teams (NETT). The AMEDD School and Center, in coordination with MACOMs, is synchronizing these training teams with fielding and conversion schedules to insure that appropriate doctrinal, training, and maintenance materials are provided to the gaining units.[28]

CENTRAL DIRECTION

The AMEDD must still continue to provide trained and ready units to support warfighting CINC's. A key tenet of the conversion process is that units should not become broken as a result of the conversion. The requisite transitions (activations, reorganizations, inactivations, and relocations) of units to MF2K is inherently turbulent and potentially degrades the capabilities of units being

supported. The downsizing of the Army further adds to this turbulence, requiring major modifications in the conversion process.

Headquarters, Department of the Army, established a task force in June, 1989 to facilitate the transition, coordinate actions around the globe, and minimize the impact of transitions on units. This task force works under the auspices of HQ, DA, DCSOPS, with the primary responsibility for coordination at the Office of the Surgeon General (OTSG). OTSG vested the lead in an organizational integration (OI) cell located in Washington, D.C. The cell is charged with the oversight responsibility for this mid-range force modernization effort. The MF2K OI Cell provides DA guidance and conducts quarterly In Process Reviews (IPR's) at the DA level with all agencies involved to identify problems, insure corrective actions, and to keep the Army's leadership abreast of the conversion status. Furthermore, oversight of this AMEDD force modernization effort is carried out in the Army's Functional Area Analysis (FAA) process. The January 1991 mini-FAA detailed the latest status of the conversion effort.[29]

In terms of design and process, the Army Medical Department identified a need to modify the delivery of health service support and developed a new program to meet the needs of Airland Battle. The concept of MF2K was briefed by the AMEDD to the Vice Chief of Staff, Army, who approved and directed funding. A conversion strategy was formalized and set into motion. As deficiencies in MF2K became apparent, those fixes were tracked and responsibilities were

assigned. The conversion process had just been initiated when the Army was told to begin downsizing; thereby, requiring modification to the conversion process. The Army Medical Department had just begun the conversion process when Iraq invaded Kuwait and the United States responded to the threat and deployed forces to the theater. The Army Medical Department provided forces that were a mix of MF2K and conventional structures. In the next sections, an examination of the medical forces in the theater of operations provides insights on the efficacy of the MF2K concept.

GULF EXPERIENCES

The Gulf conflict experience provides an opportunity to evaluate the capabilities of the current force and the concepts of MF2K. The AMEDD Lessons Learned Conference - Operation Desert Shield/Desert Storm held in August, 1991 generated 180 page document of issue statements and discussion in assessing the impact on doctrine, training, leader development, organization, and material policy. The key issues were reviewed by a senior officer panel and forwarded to the Office of the Surgeon General for Department of the Army review prior to pursuing resolution. Resolution of the issues may be possible within existing AMEDD resources and scope of practice for some issues, particularly those relating to AMEDD policy. Others may require resolution through Concept Based Requirements System (CBRS)

in order to prioritize and acquire resources. As to date, these actions can be categorized as observations only and when the review process is complete will they become lessons learned. The following observations relate directly to the MF2K concept.[30]

Observation I - Hospitalization. The first of the observations deals with the area of hospitalization. The initial hospitals deployed to Saudi Arabia were a mix of MUST and DEPMEDS equipped systems. The MUST equipment failed to perform to standard because of climatic condi

tions and the lack of the state-of-the-art medical equipment. The decision was made early in the conflict to fully modernize all hospitals with DEPMEDS. A prominent observation of DEPMEDS hospitals is that they are not mobile and take inordinate amounts of transportation assets to move.[31] This led to a conclusion by many commanders that the DEPMEDS equipped hospitals could not keep pace with a rapid moving armored force. For example, in the 18th Airborne Corps, it required 155 flatbed trucks and all organic unit transportation to make a one time single lift relocation of an evacuation hospital.[32] These assets may not be readily available in future conflicts. The MF2K hospitals were designed to support the Soviet threat and at that time it was a NATO warfight where the lines of communication were relatively short and buildings of opportunity would be used to augment existing organic assets. The original doctrine dictated that hospitals would relocate only once every 17 days. Observations from the Gulf conflict indicate the need to have

assets readily available to relocate the hospital systems.

The Gulf conflict reenforced a need to provide a far forward module element capable of have immediate life saving surgical capability. Medical Group commanders took the initiative to design medical task forces from current conventional organizations to provide that capability. One concept that has proven merit is the Forward Surgical Team (FST). This concept is incorporated into the Mobile Army Surgical Hospital (MASH) assigned to the 18th Airborne Corps.[33] The concept of FST exercised during Operation Just Cause in Panama proved to be such a workable concept that it was also exercised during the Gulf conflict. Similar organizations have been established to meet the far-forward surgical expectations of the potential rapid moving battle. Initial reports indicate that the concept of FST should be expanded to support the link between the battle front and Corps level hospitals.

Recognizing the need for an extremely mobile surgical capability, the Army Medical Department must either determine which organization can meet this requirement from MF2K assets or design another organization to meet the need. The Army Medical Department will evaluate that requirement in the evaluation of the MF2K concept. The new MF2K 30 bed MASH Force Development Test and Evaluation (FDTE) is scheduled in September 1992.[34] This evaluation will determine the treatment capability and mobility, and the effectiveness of the FST to support rapidly developing conflicts of the future.

A factor that the AMEDD must evaluate is the capability to

support all conflicts ranging from low intensity warfare to global war. Currently, MF2K hospitals are designed to be surgically intensive and provide support in a mid to high intensity conflict. The conflict in the Gulf and other regional conflicts has reenforced a need to support refugees, nation building, humanitarian assistance, and other general medical support requirements.[35] The Army generated AD HOC organizations and treatment modules in support of the Kurds in Iraq, nation building exercises in Central and South America, and humanitarian assistance in Africa. The medical support to these and other similar operations will continue to be problems facing by the U.S. military; therefore, the AMEDD has a valid need to design adequate medical support modules to support the full spectrum of military medical operations and design a mechanism to provide that capability.

Observation II - Capability versus Mobility. MF2K was designed on the concept of austere but adequate medical care. The Gulf conflict validated the trend identified during the field testing of DEPMEDS which was increasing sophistication of medical treatment was being transported to field facilities. This increased level of sophistication directly correlated to the lack of mobility.[36] It must be recognized that sophisticated technology does not provide a great impact if it cannot be positioned near the fighting. The Army Medical Department must determine if it desires a medical center type facility in the field or a field organization adequate to mission needs.

Observation III - Supply and Resupply Class VIII Requirements. The Gulf conflict also confirmed a need to adequately supply and resupply the Class VIII (medical supply) requirements of future conflicts.[27] The high cube and volume of medical supplies tasked the strategic and theater assets to provide these supplies to the user organizations in a potential mid to high intensity environment. MF2K designed a logistical organization to correct deficiencies inherent in old organizations. The viability of the transportation and distribution of Class VIII supplies was identified during the ongoing MF2K IPR processes and the Gulf conflict reenforced possible design deficiencies. The lack of organic transportation assets, storage capability, and mechanical handling equipment in the logistics battalion indicate these design deficiencies. Corrective actions have already been initiated by the AMEDD and lessons learned from Southwest Asia (SWA) experience will be incorporated in organization designs.

Observation IV - Aviation Command and Control and Maintenance. MF2K, like current organizations, depends inherently on the aeromedical organizational structure to provide timely and efficient evacuation from the point of injury through each echelon of medical care. A combination of current and MF2K aeromedical evacuation units were present in the Gulf. Conceptually MF2K designs were appropriate; but, concerns on the maintenance and Command and Control (C2) of aviation assets was a reoccurring concern during lessons learned and observations. The MF2K aviation structure does not

provide the capability to provide timely and responsive intelligence to aviation crews. Aeromedical assets tied into Aviation Brigades operations were required to link the ground and air operations with the aviation brigade and the medical evacuation battalion. There exists a need to formalize this relationship to insure timely intelligence and command and control.

The current level of intermediate aviation maintenance (AVIM) is not adequate. There exists a need for a higher level of support maintenance built in MF2K structure to provide that Direct Support (Aviation Intermediate Support Maintenance) capability.[38] That capability exists in the Army's Aviation Brigades; but there is no habitual support requirement between Army Aviation and AMEDD aviation structures to meet that need. The Army Medical Department will be required to evaluate the C2 and maintenance capability of MF2K aviation and evacuation assets and make corrections if appropriate.

Observation V - Automation Management. The Theater Army Medical Management Information System (TAMMIS) project was a force modernization project that was accelerated during the conflict. A theme that has surfaced in after action reports is a need to re-evaluate TAMMIS in terms of theater communication capability and the capability to interface with the Joint Medical Regulating System. TAMMIS functioned internally in hospitals; but, because of the lack of organic state of the Army communications capability, it was not able to perform theater wide functions.[39] The deficiency in TAMMIS communication equipment is the omission of this organic equipment in

basis of issue plans and authorization documents. There were many success stories for TAMMIS, but the concept will require a reevaluation to determine adequacy to support future conflicts.

The other components of MF2K health service support have not surfaced in great detail in after action reports. One element that did surface was that of combat stress control units which went far forward with deployed units. Preliminary evaluations indicate that the MF2K redesign of these organizations will aid in the prompt identification, treatment, and a timely return of duty. This far forward medical assistance and intervention will act as a combat multiplier for commanders by returning to duty their trained soldiers in a timely manner.[40]

Observations from Operation Desert Shield/Desert Storm have identified possible deficiencies in the MF2K concept. MF2K, which was designed to support warfare with a primary threat of the Soviets in NATO, must be reevaluated in light of the changing threat and future potential conflicts. The main emphasis is required in the area of hospitalization. The AMEDD is required to redesign those hospitalization and surgical elements that must be mobile enough to support contingency missions. Corrections to MF2K doctrine and organizations will be required as the Gulf War lessons learned are finalized.

FUTURE OPERATIONS

The United States is dealing with a changing environment and threat. Revisions in our national military strategy also require modification of the current and proposed health care system. The evolution of Airland Battle was designed as a concept for the Strategic Army of the 1990's and beyond. The new Airland Operations Concept recognizes the change in the strategic environment and threat. It describes how Army Forces will operate as the land component of military forces in future joint, combined, and interagency operations.[41] It introduces operations across the operational continuum, power projection, and as a decisive advantage as precepts for future military operations.[42] Airland Operations has been in development for over two years and the structural designs are still evolving. The Combat Service Support of the concept envisions unweighting selected echelons so the maneuver commanders are unburdened logistically so they can focus on the joint and combined arms fight. This evolving concept will require the AMEDD to revise MF2K organizations and doctrine to best support the warfight.

The future Airland Battle warfighting concept will be in four phases. These are detection/preparation; establishment of conditions for decisive operations; the conduct of decisive operations; and the reconstitution of forces.[43] The impact on the AMEDD lies in the consolidation of combat service; combat service support at the Corps; greater agility in maneuver units; new streamlined logistics; and a

greater requirement for synchronization.

Medical Force 2000 requires modification to become strategically and tactically agile enough to provide an appropriate forward presence and forward reaching health service support system. This concept will be accomplished by designing medical units that are agile, mobile, deployable, survivable, tailorable, and multifunctional. Concepts under consideration will propose a Corps Support Medical Battalion (CSMB) at the Corps level and Direct Support Medical Battalion (DSMB) at divisional levels. The Corps Medical Brigade, belonging to the Corps Support Command (COSCOM) will control medical groups composed of Combat Support Hospital (CSH), Mobile Army Surgical Hospital (MASH), Corps Support Medical Battalion (CSMB), Medical Logistics Battalions, and Direct Support Medical Battalion (DSMB). The Direct Support Medical Battalions will provide to the division, on a direct support basis, air and ground evacuation support. It will augment the division Level I and II medical treatment capability by ensuring the flow of class VIII supplies to the division and its brigades. The Corps Support Medical Battalion (CSMB) will support Corps level units with level I and II medical treatment and air and ground evacuation assets. Hospitalization for all patients in the Corps area will be provided by the Medical Group's Combat Support Hospitals, located throughout the Corps area. The MASH, also belonging to the Medical Group, will provide a far forward life saving capability, often as far forward as the Brigade area.[44]

These concepts alter current MF2K organizations. The Direct Support Medical Battalion becomes a multifunctional organization encompassing preventive medicine, optometry, mental health, and medical supply in the medical support company of the DSMB. Another deviation for MF2K tenets is in the integrated evacuation system, which replaces the current MF2K evacuation Battalion concept. This multifunctional battalion replaces the MF2K Area Support Battalion and other separate MF2K functional units under a single command. The Corps Support Medical Battalion (CSMB) provides Level I and Level II health care primarily to the Corps rear area. It also provides the capability of reenforcing or reconstituting division medical assets and provide the capability to medically task organize. At Level III, definitive medical care is provided by the Combat Support Hospital and the MASH. Corps hospitals in tactical support areas will provide medical and surgical treatment for most categories of patient. Theater hospitals located at Echelons Corps will provide definitive care and health service support for all categories of patient.[45] The characteristics indicated in Figure 13 and Figure 14 denote modifications of the new medical support battalions.

DIRECT SUPPORT MEDICAL BATTALION

Provides Echelon I, II HSS to Division and Corps unit in direct support of the Division.

Provides air/ground evacuation of Division/Corps patients to Echelon I-III facilities.

Coordinates with Medical Groups to regulate Division/Corps patients to Echelon II, III facilities.

Multifunctional. Provides Preventive Medicine, Combat Stress, Optometry, and Emergency Surgery to the Division.

Provides Class VIII supply/resupply for Division from Corps.

Provides reinforcement/reconstitution of Division HSS units.

Eliminates current evacuation battalion. Provides structure for attaching additional medical units in task organizing.

Figure 13

CORPS SUPPORT MEDICAL BATTALION

Provides air/ground evacuation of Corps patient to Echelon I-III facilities.

Provides reinforcement/reconstitution of Direct Support Medical Units.

Creates new medical organization that provides structure for attaching medical units for task organizing.

Figure 14

Health Service logistics are being designed to maximize early forward support, flexibility, and early deployment to a theater to support the first increments of a deployed force. Logistics must be anticipatory and have the capability to be tailored. It is anticipated that medical logistics in the theater will be a unit distribution system pushing pre-configured supplies and services far

forward. Class VIII supplies must reduce the reliance on strategic and theater airlift. Medical oxygen and resuscitative fluids are a high volume commodity that must be produced in theater; thereby, reducing strategic and intratheater transportation requirements. It is anticipated the Army will become the focal point for Class VIII supplies for all services; thus, greatly increasing the need to design robust medical logistics organizations. Command, control, communications, computers, and intelligence (C4I) can be handled normally by a medical command, medical brigade, or medical group. The type of medical C4I headquarters will be task organized to support the deployed force and will work on the principle of "First In - Last Out".[46]

RECOMMENDATIONS

Medical Force 2000 is a viable concept that can meet the needs for Echelon Above Divisions organizations. Observations from the Gulf conflict indicate a need to increase the mobility of the hospitalization component, a redesign of the logistics organizations, and a relook of the aviation support structure. The MF2K concept provides the near term correction in health service support and provides an adaptable system to meet the needs of the future of Airland Operations. The Army Medical Department should continue to refine its health service support organizations to the Army and truly function to "Conserve the Fighting Strength".[47]

APPENDIX I

GLOSSARY

AIRLAND BATTLE: U.S. Army operational concept for conducting integrated warfighting operations.

AIRLAND OPERATIONS: U.S. Army future concept for conducting integrated warfighting operations.

AMEDD: Army Medical Department . Term to encompass all Army medical branches.

AREA SUPPORT: Detachment - Organizations that perform general medical support through dispensaries. Detachments (OA,OB,OC,OH) and clearing that are assigned based on the population serviced.

AUG TM: Augmentation Team. Medical sub-specialty teams that are authorized to augment hospitals based on a specific specialty need.

AVIM: Aviation Intermediate Maintenance. Aviation Maintenance Organization that provides direct support aviation maintenance.

C & C: Command and Control. Term detailing the operational command and control of military organizations.

CINC: Commander in Chief. Designated unified military commander of all services assigned to a commander responsible for a warfighting mission or a worldwide/specific support mission.

CLASS VIII: Term referring to military medical supplies and maintenance of medical equipment.

CONUS: Continental United States.

COSCOM: Corps Support Command. The support organization assigned in support of a Corps.

CSH: Combat Support Hospital. Type of field medical hospital capable of providing care from 200 - 300 patients.

CSMB: Corps Support Medical Battalion. Proposed Corps level medical battalion designed to support future Airland Operations.

CUCV: Commercial Use Combat Vehicle. Civilian 4-wheel cargo vehicle used by the military.

DEPMEDS: Deployable Medical System. Standardized Department of Defense hospital system.

Dental Detachment: Type of dental detachment designed to provide field dental services.

AI - Command and control detachments.
HA - Dental company.
HB - Dental service augmentation, General Dentistry.
HC - Dental service augmentation, Removable Prosthodontics.
HD - Dental service augmentation, Fixed Prosthodontics.
HE - Central dental laboratory.

EAC: Echelons above Corps. Term referring to those military organizations normally assigned above the Corps.

EAD: Echelons above division. Term referring to those military organizations normally assigned above the division level.

Echelons: Term referring to the levels of medical care (Echelons I, II, III, IV, V).

FH: Field Hospital. Field hospital normally is capable of providing care up to 400 patients.

GH: General Hospital. Hospital capable of providing care of 500 to 1000 patients.

HSS: Health Service Support. Term that includes all services provided or arranged by the Army Medical Department to promote, improve, conserve, or restore the mental and physical well being of Army personnel.

HUMMV: High Utility Multipurpose Military Vehicle. Current generation of military (lightweight) vehicles.

LABORATORY DETACHMENTS: Type of laboratory detachments provide service on an area basis based on population size (VA/VB/VC/VE).

MASH: Mobile Army Surgical Hospital. The smallest and most mobile of Army field hospitals. Normally capable of providing care for 20 to 60 patients.

MEDSOM: Medical Supply, Optical, and Maintenance Unit.

MF2K: Medical Force 2000. Medical organizational and doctrinal organization modernization program for echelons above division medical units.

MSPR: Medical System Program Review.

MODMED: Modular Medical. Term refers to modular medical systems normally found at division and below medical units.

MUST: Medical Unit Self Contained, Transportable. Vietnam era designed field hospital.

NATO: North Atlantic Treaty Organization.

OTSG: Office of the Surgeon General.

POM: Program Objective Memorandum.

PREVENTIVE MEDICINE DETACHMENTS: Type of Preventive Medicine Detachments that provide specific services.

AM - Headquarters, Preventive Medicine.
LA - Medical Advanced Support Team, Entomology.
LB - Medical Advanced Support Team, Environmental Sanitation.
LC - Medical Advanced Support Team, Environmental Engineering.
LD - Medical Advanced Support Team, Epidemiology.
LE - Medical Advanced Support Team, Entomology Laboratory.

RTS - MED:. Regional Training Site - Medical.

TAML: Theater Army Medical Laboratory.

TRADOC: Training and Doctrine Command.

TMMC: Theater Medical Management Center.

VETERINARY DETACHMENTS: Type of veterinary detachments used to provide a specific veterinary service.

AF - Veterinary service Headquarter, Team AF.
JA - Veterinary service Small Expansion Team JA.
JB - Veterinary service Large, Team JB.
XA - Veterinary Combat Support Hospital.
XB - Veterinary General Hospital.

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